

Temperature Humidity Test Chamber



Model: TH-50/80

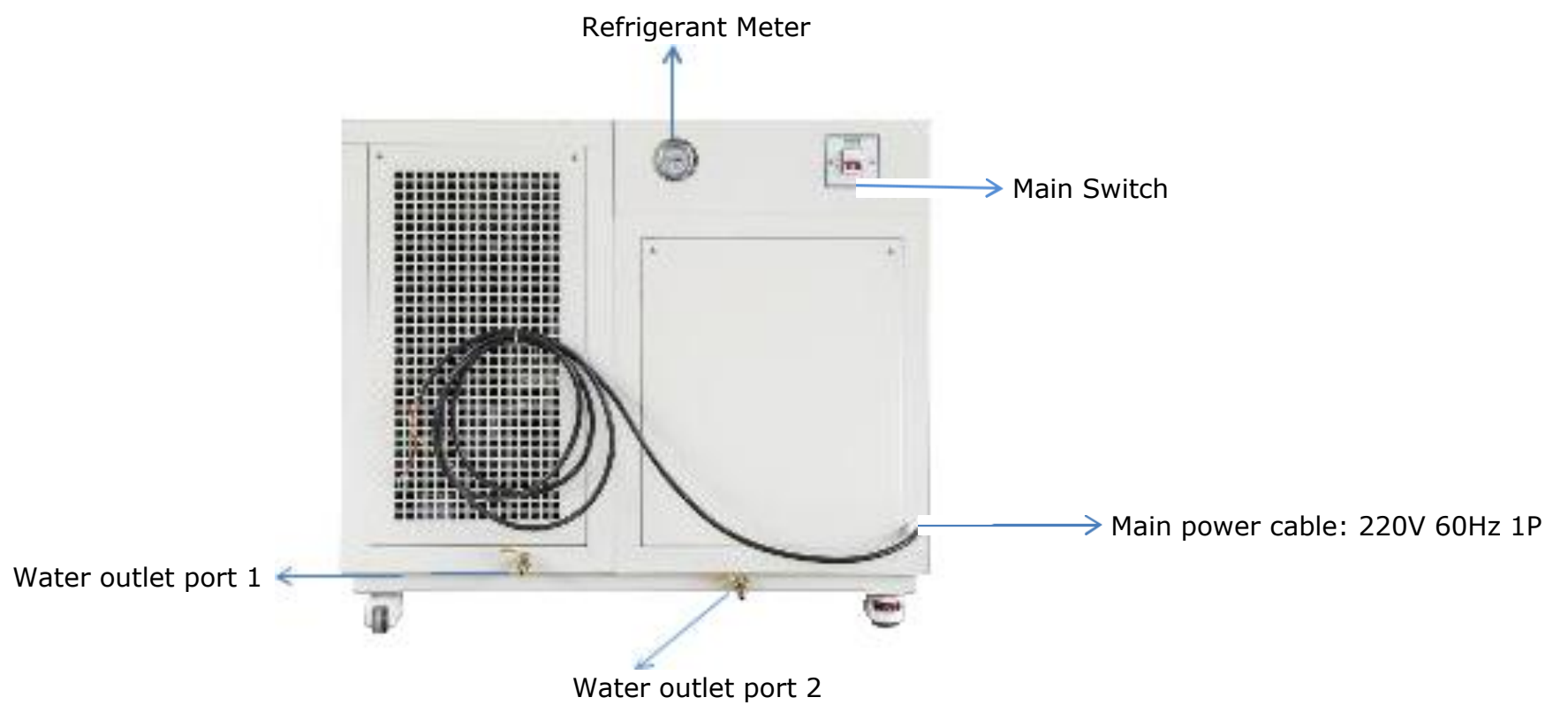
TEMPERATURE
-40°C ~ +150°C;

HUMIDITY
20%~98%RH;

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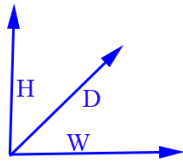
1 Diagram



2 Test Requirements

Climatic chamber
50 liters
-20 ~ +150 degree
C 20% ~ 98% RH

3 Technical Parameters



3.1 【Technical Parameter】

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Model	TH-50		TH-80		
Internal Dimension (mm)	320*350*450 D*W*H		400*400*500 D*W*H		
Overall Dimension (mm)	800*1050*950 D*W*H		900*1210*1000D*W*H		
Interior Volume	50L		80L		
Heat load	1000W				
Parameter	Temperature Range	A : -20℃ ~ +150 ℃ B : -40℃ ~ +150 ℃ C: -70℃ ~ +150 ℃			
	Temperature Fluctuation	± 0.5			
	Temperature Deviation	± 2.0 ℃			
	Humidity Range	20% ~ 98% RH			
	Humidity Deviation	± 2.5% RH			
	Cooling Rate	1 ℃ / min			
	Heating Rate	3 ℃ / min			
Structure	Cooling	Cooling system	Mechanical compression refrigeration system		
		Refrigerating unit	French TECUMSEH compressor		
		Refrigerant	R449A		
	Heating Element	Nichrome heater			
	Controller	Programmable color LCD touch screen controller			
		Ethernet connection, PC Link			
	Humidity	Humidifier	External isolation, stainless steel surface evaporation humidifier		
		Dehumidification	Evaporator		
	Sensor	Temperature Sensor	PTR Platinum Resistance PT100Ω/MV A-class, accuracy 0.001℃		
		Humidity Sensor	Dry and wet bulb sensor		
	Build-in Water Tank(mm)	150*350*180			
	View Window Size(mm)	120*150			
Air Circulation	Centrifugal wind fan				
Safety Device	Humidifier Dry-combustion protection; Over-temperature Protection; Over-current Protection; Refrigerant High-pressure protection; Water Shortage Protection; Earth leakage Protection				
Material	Exterior Material	Steel Plate with protective coating			
	Interior Material	SUS304 stainless steel			
	Thermal Insulation	Polyurethane foam and insulation cotton			
	Observation Window	Interior lighting, double-layer thermo stability silicone rubber sealing			
Standard Configuration	1 Cable hole (Φ 50,) with plug; 2 shelves				
Power Supply	220V 50Hz, 1P				
Maximum Noise	65 dBA				
Environmental Conditional	5℃~+35 ℃ ≤85% RH				

3.2 【Construction】

3.2.1. Test area

- The internal material is 304 stainless steel, mirror surface, rust-proof to high and low temperature and moisture corrosion; Nice ruggedness and long life.
- SUS304 stainless steel punching sample shelf 2pcs, to place your samples.
- Standard load of 25KGS for each layer of the sample shelf.
- The height of the shelf is adjustable and can be removed directly to facilitate the various sizes of samples.
- Conducive to the air circulation.
- PT-100 Class A sensor, real-time accurate detection and display of temperature changes at 0.001 degrees.
- A wet gauze and a real-time temperature, converted by temperature difference, showing real-time relative humidity.



Temperature and humidity sensor



3.2.2 Cooling System

- Mechanical compression refrigeration system
- The refrigerating unit is a French Tecumseh compressor.
- Environment friendly refrigerant R449B.
- Principle: After the liquid refrigerant absorbs the heat of the cooled object in the evaporator, it is vaporized into low-temperature and low-pressure steam, sucked by the compressor, compressed into high-pressure high-temperature steam, discharged into the condenser, and radiated to the cooling medium in the condenser, condensed into a high-pressure liquid, throttling through a throttle valve into a low-pressure low-temperature refrigerant, and again entering the evaporator to absorb heat and vaporize, to achieve the purpose of cycle refrigeration.
- In this way, the refrigerant completes a refrigeration cycle through four basic processes of evaporation, compression, condensation, and throttling in the system.



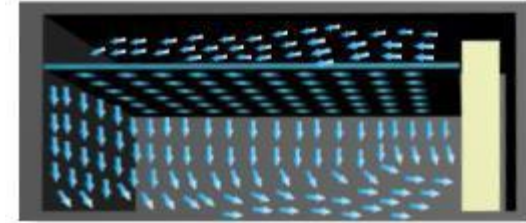
3.2.3 Humidification & Dehumidification System

- External isolation, stainless steel surface evaporation humidifier With water drainage valve at the backside of chamber
- Principle: When the current humidity is less than the setpoint humidity, the equipment is automatically humidified. The humidification is automatically heated by the humidification tank. When the water is heated, steam is generated, and then the steam is injected into the working room to increase the test humidity.



3.2.4 Air circulation

- Forced air circulation in testing room to ensure the temperature
- Uniformity. The centrifugal fan is installed at the rear of the chamber body, and the air is uniformly distributed through the air outlet. Air circulation adopts air outlet at top and air return at bottom, and the wind speed and pressure are in compliance with the test standard, and the temperature is stabilized at the moment of switching. The high-quality centrifugal fan is used to strongly supply air circulation, making the temperature distribution in the test area uniform.



3.2.5 Viewing Window

- Double layer insulating glass 8cm thick, made of tempered glass. The conductive film is located on the interior glass to prevent window frosting, built-in LED light for the workroom lighting; can clearly observe samples.
- The light control button is located below the controller.



3.2.6 Cable Hole

- The standard test hole, located at the left side of the workroom, is provided with a sleeve inside to prevent moisture from entering the insulation layer. Equipped with flange.
- The standard inner hole diameter is 50mm. Soft silicone plug seal; Metal enclosure closed, beautiful designed.



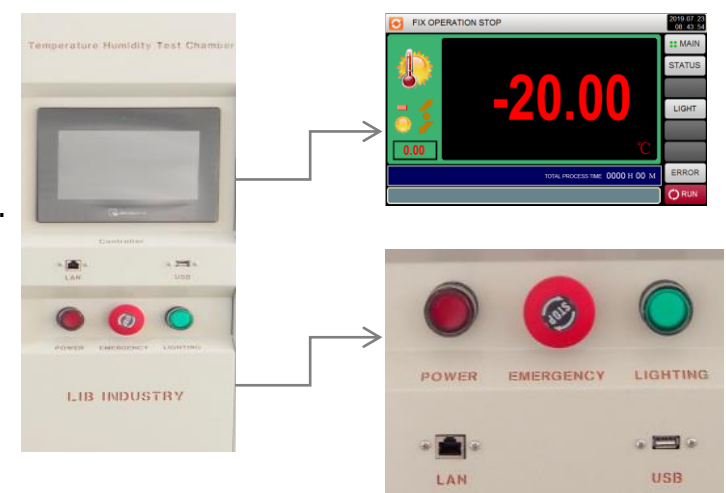
3.2.7 Castor

- Install 4 castors for ease moving, and with brakes function. Caster height adjustable.



3.2.8 Control Panel

- PID programmable color touch screen controller, network connection computer.
- Can edit 120 programs 100 segment.
- LIB also can preset program into the controller based on user testing requirements.
- The set system language is English for standard.
- USB & Ethernet interface, PC link
- Emergency stop button



3.2.9 Insulation

- 10cm thick polyurethane foam and insulation cotton;
- Better insulation performance, degradation resistance, environmental protection, noise reduction.



3.2.10 Protection System

- Humidifier Dry-combustion protection;
- Over-temperature Protection;
- Over-current Protection;
- Refrigerant High-pressure protection;
- Earth leakage Protection